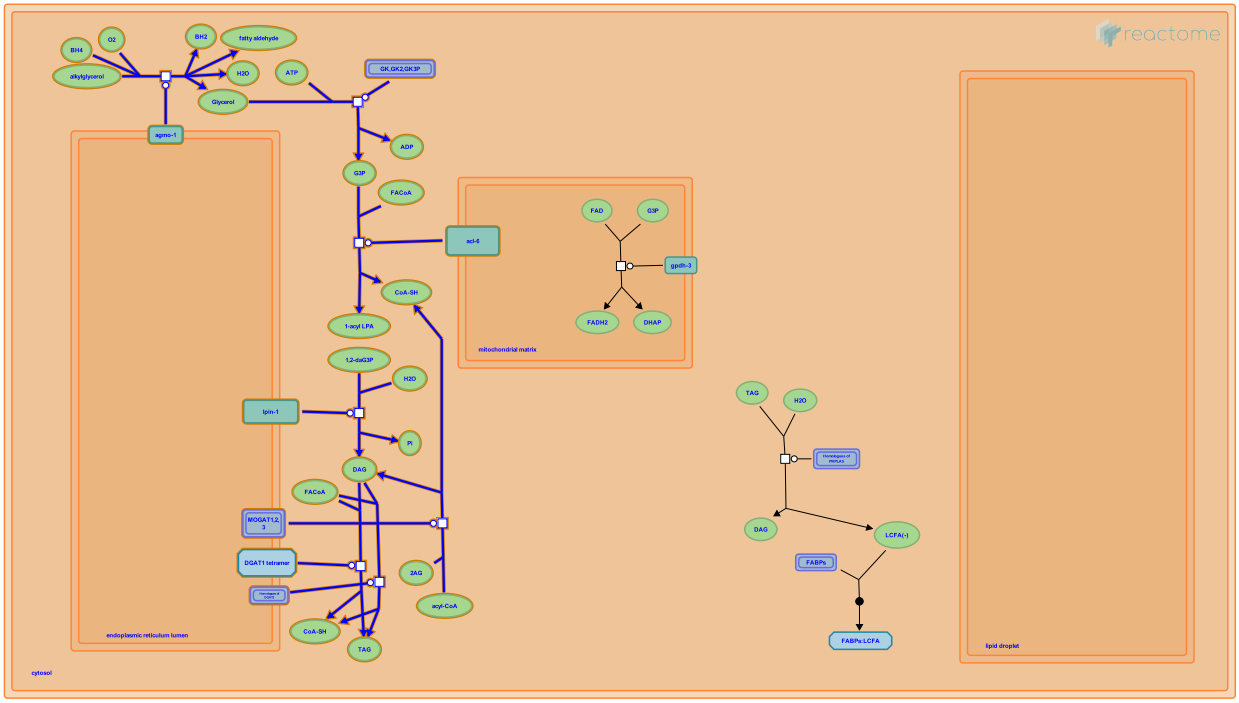
Triglyceride biosynthesis



European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

25/11/2020

Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

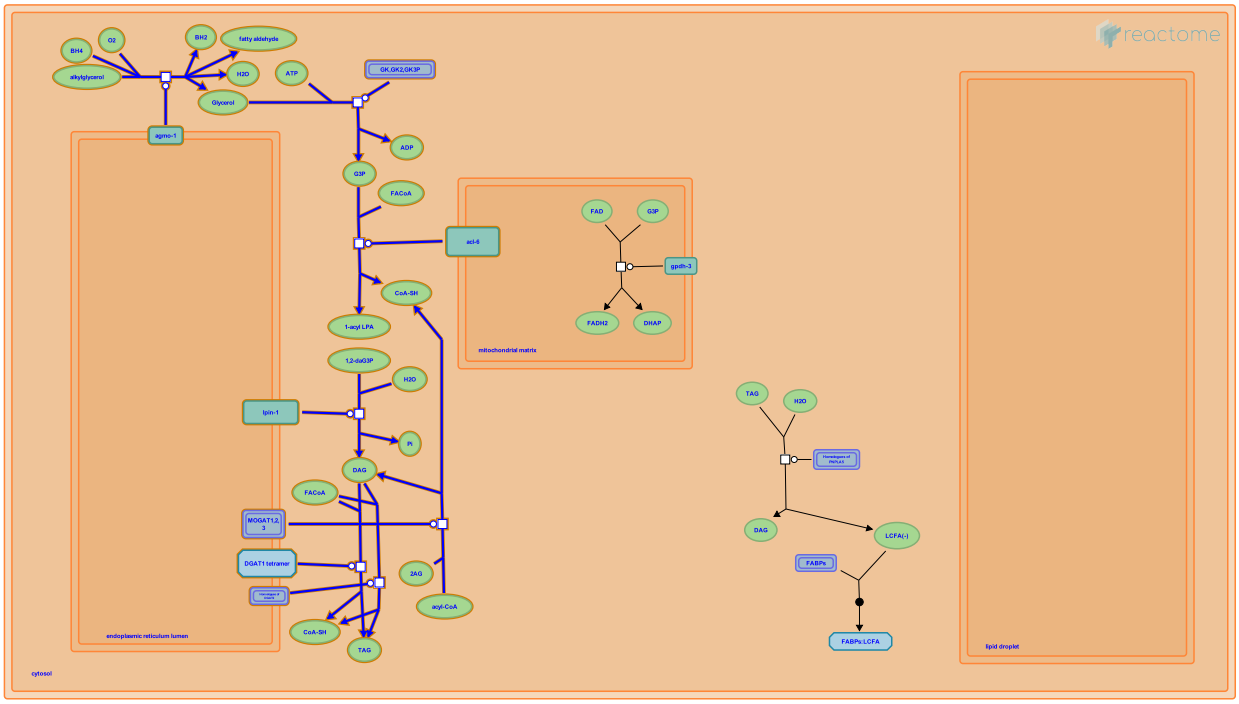
Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

Triglyceride biosynthesis ↗

Stable identifier: R-CEL-75109

Compartments: cytosol, endoplasmic reticulum membrane

Inferred from: Triglyceride biosynthesis (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

AGMO cleaves alkylglycerol into fatty aldehyde and glycerol ↗

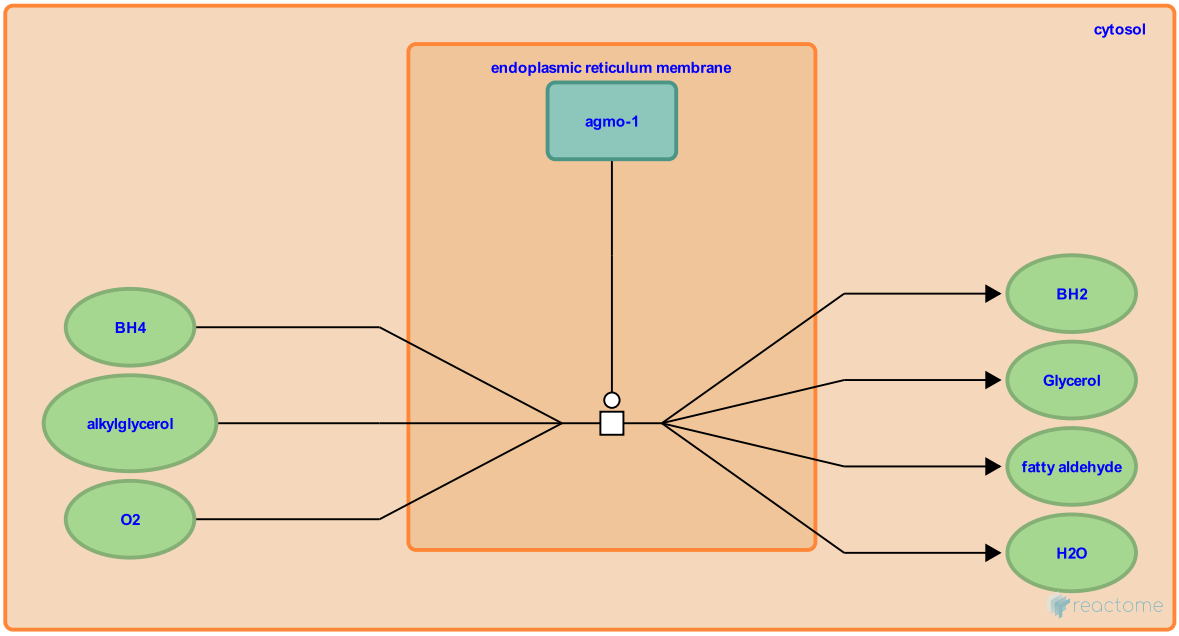
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-5696119

Type: transition

Compartments: endoplasmic reticulum membrane, endoplasmic reticulum lumen

Inferred from: AGMO cleaves alkylglycerol into fatty aldehyde and glycerol (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Conversion of Glycerol to Glycerol-3-phosphate ↗

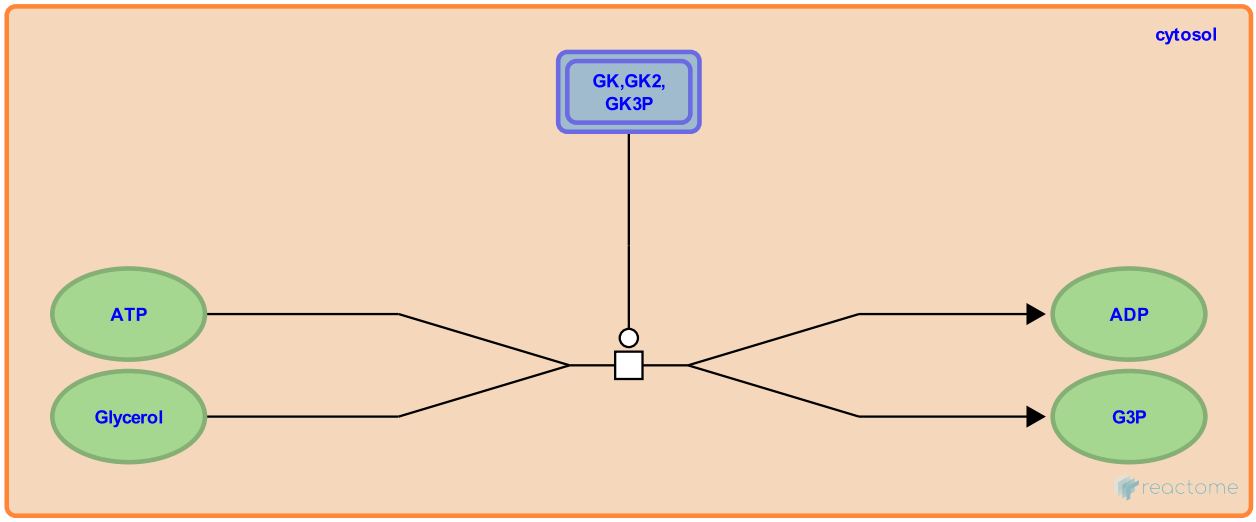
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-75887

Type: transition

Compartments: cytosol

Inferred from: Conversion of Glycerol to Glycerol-3-phosphate (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Followed by: glycerol 3-phosphate + acyl-CoA => 1-acylglycerol 3-phosphate + CoASH [mitochondrial membrane-associated]

glycerol 3-phosphate + acyl-CoA => 1-acylglycerol 3-phosphate + CoASH [mitochondrial membrane-associated] ↗

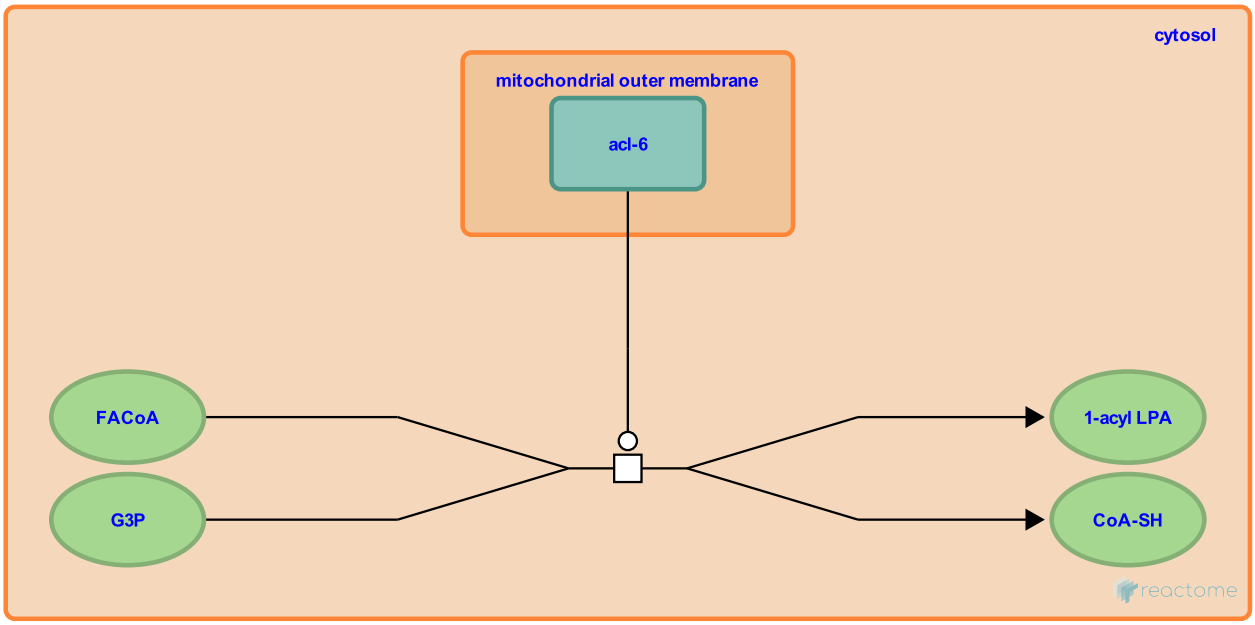
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-75886

Type: transition

Compartments: cytosol, mitochondrial outer membrane

Inferred from: glycerol 3-phosphate + acyl-CoA => 1-acylglycerol 3-phosphate + CoASH [mitochondrial membrane-associated] (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Preceded by: Conversion of Glycerol to Glycerol-3-phosphate

1,2-diacyl-glycerol 3-phosphate + H2O => 1,2-diacyl-glycerol + orthophosphate ↗

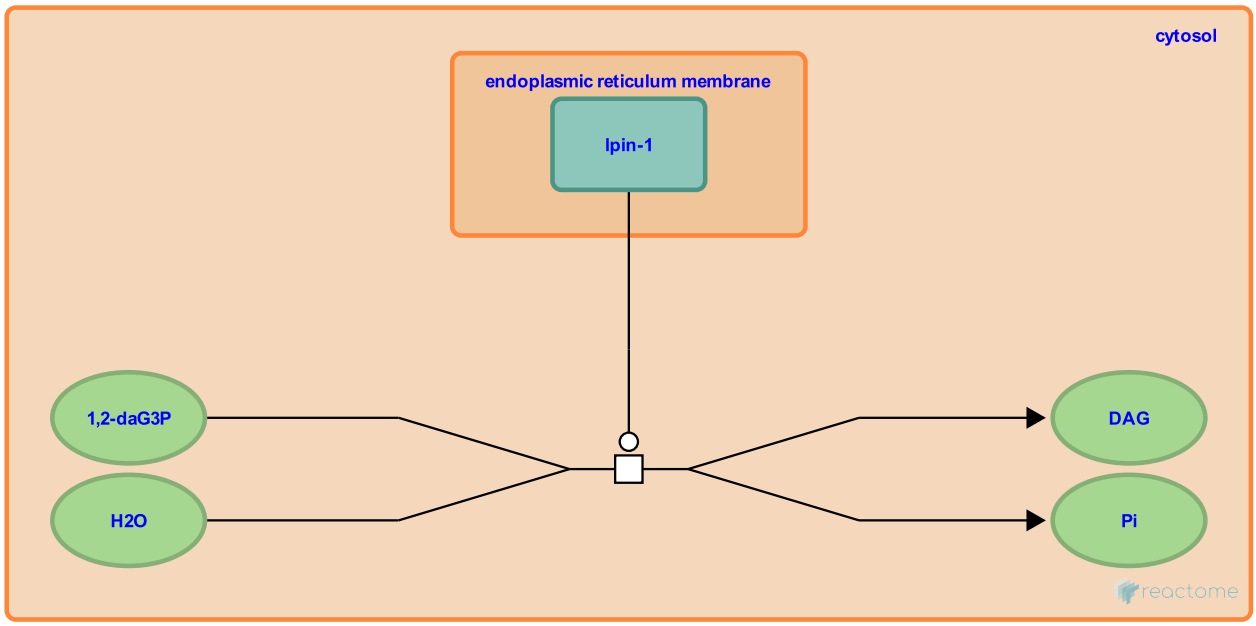
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-75899

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane

Inferred from: 1,2-diacyl-glycerol 3-phosphate + H2O => 1,2-diacyl-glycerol + orthophosphate (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Followed by: 1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT1], 1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT2]

MOGAT1,2,3 transfer acyl group from acyl-CoA to 2-acylglycerol to form DAG ↗

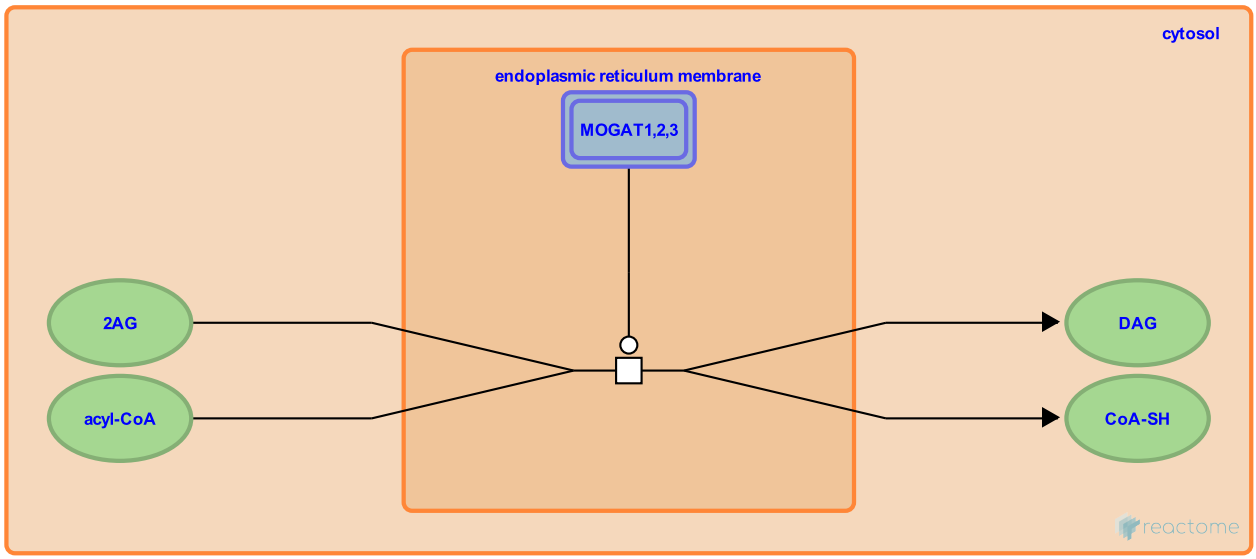
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-6800334

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol

Inferred from: MOGAT1,2,3 transfer acyl group from acyl-CoA to 2-acylglycerol to form DAG (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT1] ↗

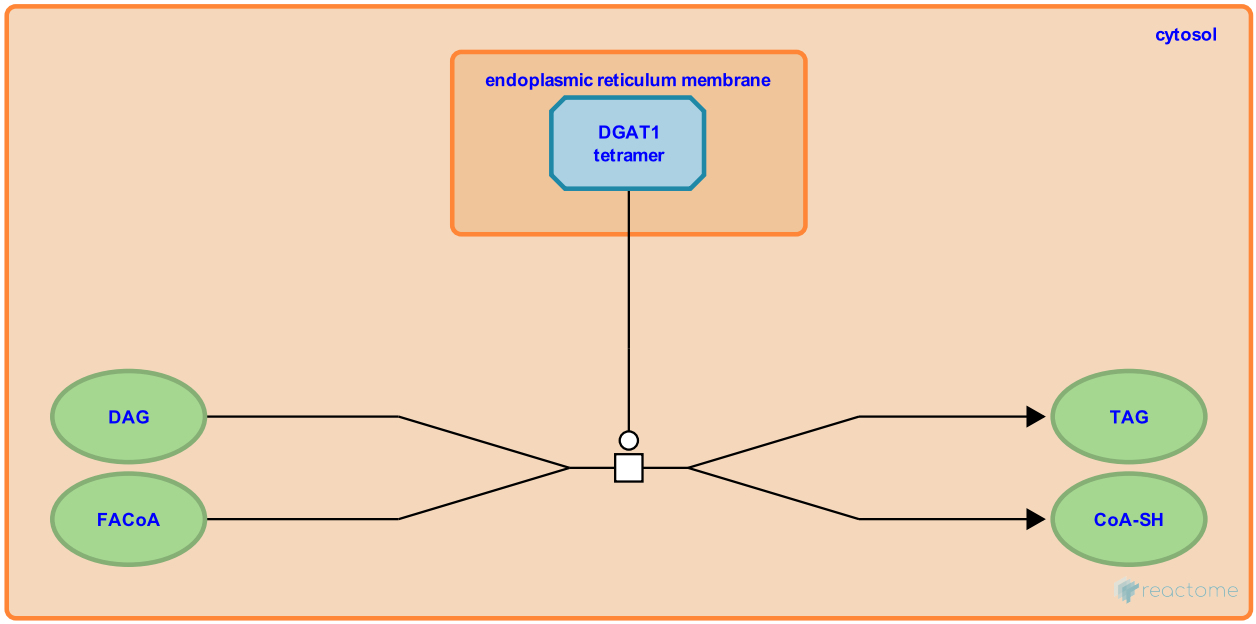
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-75900

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane

Inferred from: 1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT1] (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Preceded by: 1,2-diacyl-glycerol 3-phosphate + H2O => 1,2-diacyl-glycerol + orthophosphate

1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT2] ↗

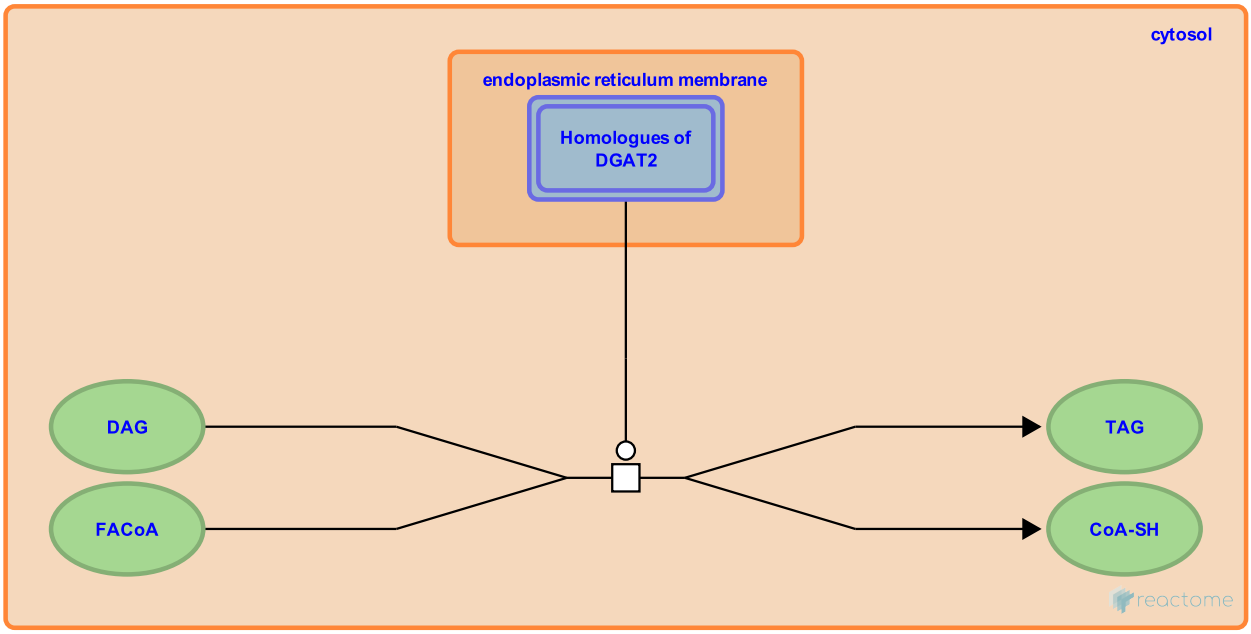
Location: Triglyceride biosynthesis

Stable identifier: R-CEL-549192

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane

Inferred from: 1,2-diacyl-glycerol + acyl-CoA => triacylglycerol + CoASH [DGAT2] (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Preceded by: 1,2-diacyl-glycerol 3-phosphate + H2O => 1,2-diacyl-glycerol + orthophosphate

Table of Contents